

IN THE CLAIMS:

- 1 1. (Currently amended) An electronic device, comprising a sensor sensitive to
2 position of a ~~conductive or ferrous~~ material, said sensor comprising a single coil
3 inductance transducer, a temperature measurement circuit for providing a
4 temperature output derived from said sensor, a position measuring circuit for
5 measuring position of said ~~conductive or ferrous~~ material, and a voltage controlled
6 gain adjusting device, wherein said temperature measurement circuit provides a
7 voltage proportional to temperature to said voltage controlled gain adjusting
8 device to adjust output voltage of said position measuring circuit to provide
9 temperature compensated sensor data, wherein said temperature measurement
10 circuit uses a signal derived from resistance of said single coil inductance
11 transducer to provide said voltage proportional to temperature.
- 1 2. (Currently amended) The electronic device as recited in claim 1, wherein said
2 ~~conductive or ferrous~~ material comprises a magnetically permeable member,
3 wherein said magnetically permeable member is moveable.
- 1 3. (Previously amended) The electronic device as recited in claim 2, wherein said
2 moveable magnetically permeable member is located within said single coil
3 inductance transducer.
-
- 1 4. (Cancel)
- 1 5. (original) The electronic device as recited in claim 1, wherein said sensor is a
2 displacement sensor.

- 1 6. (original) The electronic device as recited in claim 1, wherein said sensor
2 comprises input pads for receiving a first signal and a second signal, said first
3 signal having a higher frequency than said second signal.
- 1 7. (Cancel)
- 1 8. (Previously amended) The electronic device as recited in claim 1, wherein said
2 voltage controlled gain adjusting device comprises a variable gain amplifier or a
3 microprocessor.
- 1 9. (Currently amended) The electronic device as recited in claim 1, wherein said
2 magnetically permeable member comprises a highly permeable material.
- 1 10. (Currently amended) The electronic device as recited in claim 9, wherein said
2 highly permeable material comprises one or more from the group consisting of
3 permalloy, ferrite, and 400 series stainless steel.
- 1 11. (original) The electronic device as recited in claim 1, wherein said magnetically
2 permeable member comprises magnetoelastic characteristics.
- 1 12. (Currently amended) The electronic device as recited in claim 11, wherein said
2 magnetoelastic characteristics are modulated by one or more from the group
3 consisting of strain, stress, or and torque.

1024-038

3

09/911,959

1 13. (Previously amended) An electronic device, comprising a single coil inductance
2 transducer having a single coil and a magnetically permeable member that
3 extends in said single coil, said device further comprising a temperature
4 measurement circuit, a position measuring circuit, and a voltage controlled gain
5 adjusting device, wherein said temperature measurement circuit provides a
6 voltage proportional to temperature to said voltage controlled gain adjusting
7 device to adjust output voltage of said position measuring circuit to compensate
8 for a change in temperature in said single coil and in said member.

1 14. (Previously amended) The electronic device as recited in claim 13, wherein said
2 magnetically permeable member is moveable with respect to said single coil.

1 15. (Previously amended) The electronic device as recited in claim 13, wherein said
2 circuit uses resistance of said single coil to compensate for change in temperature
3 of said single coil and in said member.

1 16. (Currently amended) The electronic device as recited in claim 13, wherein said
2 sensor single coil inductance transducer comprises is a displacement sensor.

1 17. (Previously amended) The electronic device as recited in claim 13, wherein said
2 transducer comprises input-pads-for-receiving a first signal and a second signal,
3 said first signal having a higher frequency than said second signal.

1 18. (Cancel)

2 19. (Previously amended) The electronic device as recited in claim 13, wherein said
3 voltage controlled gain adjusting device comprises a variable gain amplifier or a
4 microprocessor.

1 20. (original) The electronic device as recited in claim 13, wherein said magnetically
2 permeable member comprises a highly permeable material.

1 21. (Currently amended) The electronic device as recited in claim 20, wherein said
2 highly permeable material comprises one or more from the group consisting of
3 permalloy, ferrite, and 400 series stainless steel.

1 22. (original) The electronic device as recited in claim 13, wherein said magnetically
2 permeable member comprises magnetoelastic characteristics.

1 23. (Currently amended) The electronic device as recited in claim 22, wherein said
2 magnetoelastic characteristics are modulated by one or more from the group
3 consisting of strain, stress, or and torque.

1 24. (Currently amended) An electronic device, comprising a single inductor, a
2 ~~conductive or magnetically permeable~~ member coupled to said single inductor, a
3 temperature measurement circuit, an inductance measuring circuit, and a voltage
4 controlled gain adjusting device, wherein said temperature measurement circuit
5 provides a voltage proportional to temperature to said voltage controlled gain
6 adjusting device to adjust output voltage of said inductance measuring circuit to
7 provide an adjusted output voltage independent of temperature of said single
8 inductor and temperature of said ~~conductive or magnetically permeable~~ member.

1 25. (Currently amended) The electronic device as recited in claim 24, wherein said
2 ~~magnetically permeable~~ member is moveable with respect to said inductor.

1 26. (Previously amended) The electronic device as recited in claim 24, wherein said
2 circuit uses resistance of said single inductor to compensate for change in
3 temperature of said single inductor and in said member.

1 27. (Currently amended) The electronic device as recited in claim 24, wherein said
2 single inductor, said member and said circuit comprise a sensor.

1 28. (Currently amended) The electronic device as recited in claim 27, wherein said
2 single inductor, said member and said circuit comprise a displacement sensor.

1 29. (Previously amended) The electronic device as recited in claim 28, wherein said
2 sensor comprises input pads for receiving a first signal and a second signal, said
3 first signal having a higher frequency than said second signal.

1 30. (Cancel)

1 31. (Previously amended) The electronic device as recited in claim 24, wherein said
2 voltage controlled gain adjusting device comprises a variable gain amplifier or a
3 microprocessor.

1 32. (Currently amended) The electronic device as recited in claim 24, wherein said
2 magnetically permeable member comprises a highly magnetically permeable
3 material.

1 33. (Currently amended) The electronic device as recited in claim 32, wherein said
2 highly magnetically permeable material comprises one or more from the group
3 consisting of permalloy, ferrite, and 400 series stainless steel.

1 34. (Currently amended) The electronic device as recited in claim 24, wherein said
2 magnetically permeable member comprises magnetoelastic characteristics.

1024-038

6

09/911,959

1 35. (Currently amended) The electronic device as recited in claim 34, wherein said
2 magnetoelastic characteristics are modulated by one or more from the group
3 consisting of strain, stress, or and torque.

1 36-52. (Cancel)

1024-038

7

09/911,959

1 53. (Currently amended including the Examiner's amendment) A device comprising a
2 single component, a temperature measurement circuit, a first parameter measuring
3 circuit for measuring a value of said single component, and a voltage controlled
4 gain adjusting device and a circuit, wherein said temperature measurement circuit
5 provides a voltage proportional to temperature to said voltage controlled gain
6 adjusting device to adjust output voltage of said first parameter measuring circuit
7 wherein said single component is used by said circuit both for sensing a first
8 parameter and for sensing temperature wherein the temperature is used in said
9 circuit for correcting said first parameter to make adjusted output voltage of said
10 of said first parameter measuring circuit independent of change in temperature
11 with time.

1 54. (Cancel)

1 55. (Previously amended) A circuit as recited in claim 53, wherein said single
2 component comprises a single inductor.

1 56. (Cancel)

1 57. (Previously amended) A circuit as recited in claim 55, wherein said single
2 inductor has a magnetically permeable core.

1 58. (previously presented) The electronic device as recited in claim 57, wherein said
2 magnetically permeable core has a core length and said single inductor has a
3 single inductor length, wherein said core length is about equal to said single
4 inductor length.

1024-038

8

09/911,959

1 59. (Previously amended) The electronic device as recited in claim 53, wherein said
2 voltage controlled gain adjusting device comprises a variable gain amplifier or a
3 microprocessor.

1 60. (previously presented) The electronic device as recited in claim 53, further
2 comprising a lower frequency power supply and a higher frequency power supply
3 connected to provide a lower frequency and a higher frequency signal to said
4 single component.

1 61. (previously presented) The electronic device as recited in claim 60, wherein said
2 lower frequency power supply provides direct current.

1 62. (previously presented) The electronic device as recited in claim 53, further
2 comprising a low pass filter and a high pass filter, each connected to receive an
3 output of said single component.

1 63. (previously presented) The electronic device as recited in claim 53, further
2 comprising a demodulator positioned after said high pass filter.

1 64. (previously presented) The electronic device as recited in claim 53, further
2 comprising a difference amplifier connected to receive said low frequency signal
3 output from said coil, wherein said difference amplifier provides a voltage
4 proportional to a temperature of said coil.

1 65. (previously presented) The electronic device as recited in claim 64, wherein said
2 difference amplifier comprises an instrumentation amplifier.

1 66. (previously presented) The electronic device as recited in claim 53, further
2 comprising a span adjustment circuit.

1024-038

9

09/911,959

1 67. (previously presented) The electronic device as recited in claim 66, wherein said
2 span adjustment circuit comprises a variable gain amplifier.

1 68. (previously presented) The electronic device as recited in claim 66, wherein said
2 span adjustment circuit comprises a microprocessor.

1 69. (Currently amended) The electronic device as recited in claim 3, wherein said
2 ~~magnetically permeable~~ member has a member length and said single coil has a
3 single coil length, wherein said member length is about equal to said single coil
4 length.

1 70. (Currently amended) The electronic device as recited in claim 13, wherein said
2 ~~magnetically permeable~~ member has a member length and said single coil has a
3 single coil length, wherein said member length is about equal to said single coil
4 length.

1 71. (Currently amended) The electronic device as recited in claim 24, wherein said
2 magnetically permeable member has a member length and said single inductor has
3 an single inductor length, wherein said member length is about equal to said
4 single-inductor-length.

1 72. (Currently amended) The electronic device as recited in claim 1, wherein said
2 material includes one or more from the group consisting of a conductive material
3 and a ferrous material sensor is to detect the position or presence of a conductive
4 or ferrous target.

1 73. (Currently amended) The electronic device as recited in claim 72 1, wherein said
2 single coil and said target material are non-contacting and wherein said position
3 measuring circuit measures relative position of said single coil and said material
4 target are measured.

1 74. (previously presented) The electronic device as recited in claim 72, wherein said
2 target material has magnetoelastic characteristics.

1 75. (Currently amended) The electronic device as recited in claim 1, wherein said
2 sensor comprises one or more from the group consisting of a displacement sensor,
3 a force sensor, an acceleration sensor, a pressure sensor, or and a torque sensor.

1 76. (previously presented) The electronic device as recited in claim 1, wherein said
2 sensor further comprises a flexure element.

1024-038

11

09/911,959